Soil Structure & Chemistry Monitoring
in the Southern Plains Network

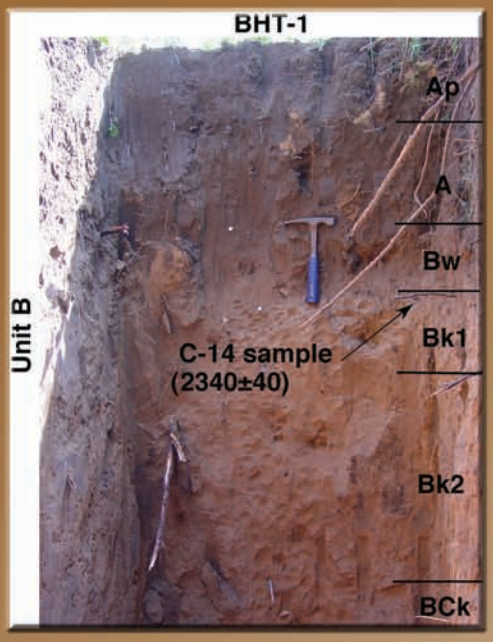
Importance / Issues

Soils are commonly overlooked as important indicators of ecosystem health. However, soils have profound influences on both natural and cultural resources, and those occurring within the Southern Plains Network Parks are no exception. Therefore, knowing the status and trends of soil conditions within the SOPN is critical for maintaining the integrity of the parks. Monitoring the soil structure and chemistry vital sign will help managers make informed decisions on preventing erosion, blocking the invasion of native and non-native plant species, averting the degradation of the soil biota, and avoiding the inhibition of important ecological services that soils provide (e.g., nutrient cycling).

Preliminary Monitoring Objective

1. Determine trends in annual soil respiration measurements.

2. Detect changes in ecosystem carbon balance. Determine status and annual trends in soil cover, aggregate stability, compaction, and erosion



Soil Profile

Soil Sampling

Potential Measures

Soil nutrient (C, N, P) levels, soil classification, rates of erosion, percent cover of bare soil.

Protocol Development & Status

SOPN's soil structure and chemistry monitoring protocol will largely be based on soil sampling and assessment methods previously developed by other agencies (e.g., National Resource Conservation Service, Bureau of Land Management US Geological Survey and US Forest Service), but will be adapted to suit the needs of soils in our network. Karie Cherwin is leading the development of the soil structure and chemistry vital sign protocol and will incorporate this monitoring plan with the vegetation monitoring protocols. The planned completion date is November 2007.

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